

17 September, 1970.

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Dear Leo

Your letter of 6th September is very difficult to answer, except to say that I don't have any memorandum on the subject.

The areas that Sydney and I find attractive are, broadly, developmental biology and the higher nervous system. These cover a wider range but not the whole of biology by any means. For example, problems not covered are the special senses, ecology, evolution, etc. Even if attention is restricted to the two topics I have suggested, the areas are far too large for any institute to attempt to cover them exhaustively. Thus, special problems must be selected. This is an extremely difficult thing to do and Sydney and I worry about it constantly. Moreover, what is suitable for our lab is not necessarily suitable for yours. However, the strategy of our thinking might help you, so I can describe this briefly.

Our basic idea is to take a general field and subdivide it into separate problems. For example, in developmental biology separate problems might be:

1. positional information
2. control mechanisms in eukaryotes
3. mitosis
4. chemotaxis
5. fibrilla elements in the cytoplasm

and many others

The sensible thing is then to search for a suitable organism to help one tackle one of these problems, and not to bother about whether it may or may not be suitable for any of the others. In other words, we think the search for the "phage" of developmental biology, as a whole, is hopeless, but that one can look for the "phage" for each sub-problem. Of course, the actual choice involves a deep intellectual analysis of the nature of the problem and the sort of methods likely to be required to solve it.

Beyond this I can only make obvious suggestions. It is better to start a new line of work which has some hope of interacting with work

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already going on in the same place. Otherwise why bother to set it up at that particular place. Thus, one has to consider on what lines an institute is already strong. Another factor is whether an existing staff member has already acquired an acute interest in an adjacent field. However, the most important rule of all is not to worry overmuch about exactly which subjects should be followed, provided the subjects chosen are acceptable, but to find good people who already want to do them, and preferably good young people, in their late twenties or thirties. It is quite useless drawing up a grand scheme of promising subjects and then find that either no suitable person exists to do them, or that all the good people can't be moved. If this difficulty becomes acute the only way out is to set up numerous rather small groups of very young and promising people, on a limited tenure, and let them compete. Of course this, too, can lead to problems!

I'm sorry all this is so vague and sketchy, but perhaps it may be of some use.

Yours sincerely

F.H.C. Crick